The framework for regional collaboration in animal agriculture: The SADC animal agriculture network (SAARNET)

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Abstract

SACCAR's strategy emphasises that dynamic, productive and responsive agricultural research systems are essential to realising the food security potential of the Southern African Development Community (SADC) region and the continuous development of technologies for different sectors of agriculture will depend on a co-ordinated effort by countries of the SADC region. It is against this backdrop that SACCAR has adopted networking as a strategy to achieve strong co-ordination and collaboration among SADC member states for regional development and advancement in agriculture. The SADC Animal Agriculture Research Network (SAARNET) was therefore formed in 1997 as a joint effort between SACCAR and International Livestock Research Institute (ILRI) to provide the framework for regional co-ordination and collaboration in animal agriculture. SAARNET as a regional network aims at promoting partnerships between different stakeholders (institutes, governments, donors, farmers and research disciplines) to solve common problems. Partnerships will be strengthened between stakeholders through participatory approaches (workshops, seminars, field days and training sessions) to plan and prioritise activities, and share information, technology, and materials. The organisation and operation of a collaborative research network such as SAARNET is very challenging though rewarding. It is therefore critical that the institutional framework and activities of the research network are clearly related to the needs and goals of all its stakeholders, including the farmer. Also crucial to the success of the network are simple but efficient mechanisms for co-ordination, information dissemination, monitoring and evaluation, and impact assessment. Above all, a network needs sustainable funding to be able to implement its programmes and ensure the effective participation of the stakeholders, particularly the National Agricultural Research Institutions (NARIs). This paper elaborates SAARNETS strategy to achieve this daunting task.

Keywords: SADC, SACCAR, Regional collaboration, Animal agriculture, SAARNET

Introduction

The central problem facing SADC member states today, like many other regions of the developing world, is providing sustainable food security for a human population that is increasing by almost 3% annually while protecting the environment at the same time. In confronting this daunting task, SADC member states agreed to work together and created the Food, Agriculture and Natural Resources Sector to address this challenge, with the Botswana Government responsible for the co-ordination of agricultural research and training (Natural Resources, Fisheries and Forestry were added later).

To fulfil its mandate, the Botswana Government established SACCAR in 1984 to co-ordinate regional research and training activities. SACCAR adopted networking as a mechanism for accomplishing its regional mandate for research in collaboration with its partners, mainly the IARCs. Up to 1996, the ILRI supported collaborative research networks, AFRNET, CARNET

and SRNET, worked within SADC, but largely on a bilateral basis. There were no direct links between these networks and SACCAR, except through reciprocal representations at meetings at institutional levels.

A number of developments have begged for the revolutionisation of this *modus operandi*. The 1990s saw a strong focus on regional associations by the World Bank and other major donors as providing the best opportunity for reinvigorating and strengthening collaboration in agricultural research compared to the traditional bilateral initiatives. An external review of the NARS- ILRI collaborative research networks (AFRNET, CARNET and SRNET) by major donors (USAID, GTZ, IDRC and ODA) in 1994 recommended that the commodity networks be transformed from their predominant disciplinary and pan-African operational strategy into a multidisciplinary livestock network with regional focus. Following the review and analysis of its 1995 priorities and long-term strategy, the Board of SACCAR and the major stakeholders recognised in 1997, the need to give livestock research, especially animal production research, a higher profile in future regional activities compared to the past. This review also underscored the need to adopt networking as the mode of operation in the implementation of all regional initiatives. Another important development worth noting is the gradual but consistent reduced funding of international and national agricultural research, especially livestock research, due to several reasons including misconceptions about the impact of livestock on the environment and human health as well as economic stress in the developed world.

It is against this backdrop that SACCAR, in consultation with its major stakeholders (including ILRI), decided to do a fundamental restructuring of its livestock sector, including the creation of a livestock research network known as the SADC Animal Agriculture Research Network (S-AARNET), to ensure a balanced development towards the achievement of sustainable food security in the region. The proposed network strategy and programmes that follow provide the platform for the implementation of the SADC-SACCAR livestock research and development strategy.

To ensure food security and stimulate development, the region must increase the productivity of agriculture, including animal agriculture through science - based technologies and inputs. This can be achieved largely through the establishment of regionally co-ordinated research systems that are strong and sustainable. This proposition was underscored in SACCAR's Regional Research Priorities for Crop and Livestock Production document (SACCAR 1997), which indicates strongly that "Dynamic, productive and responsive agricultural research systems are essential to realising the potential of the SADC region. The continuous development of technologies for different sectors of the farming community will depend on a co-ordinated effort by countries of the SADC region"

The new paradigm in networking, that is, the regional approach, is thus very consistent with this regional strategy.

The SADC animal agriculture research network (S-AARNET)

The evolution

ILRI (then ILCA), like SACCAR, adopted networking as a mechanism for capacity building for research in the National Agricultural Systems (NARS) in sub-Saharan Africa. This led to the establishment of three pan-African livestock commodity networks between 1989 and 1990: AFRNET, CARNET and SRNET.

In 1994, an external review of the NARS- ILRI collaborative research networks (AFRNET,

CARNET and SRNET), by major donors (USAID, GTZ, IDRC and ODA) recommended that the commodity networks be transformed from their predominant disciplinary and pan-African operational strategy into a multidisciplinary livestock network with regional focus. In the same year, the Special Programme for African Agricultural Research (SPAAR), the donor community, NARS and IARC's decided to work through regional organisations including ASARECA, CORAF and SACCAR, to reinvigorate and strengthen collaboration in agricultural research in sub-Saharan Africa. These developments were seen as a driving force for change in the operations and structure of the existing networks as well as providing new opportunities for technology generation and transfer to fuel sustainable increases in market oriented livestock production in the sub-region.

In March 1996, a meeting of the Steering Committees (composed of elected NARS scientists) of the three pan-African collaborative commodity research networks endorsed the recommendation to reorganise the ILRI supported networks into a multidisciplinary regional livestock network. This network was to be affiliated to the sub-regional research organisations (ASARECA, SACCAR and CORAF) in order to make them more relevant to regional animal agriculture research needs and priorities.

In September 1996, the recommendation to reorganise ILRI-supported collaborative research networks was approved by the SACCAR Board of Directors (CD).

In April 1997, at a joint SACCAR-ILRI workshop, the representatives of SADC member states formally launched the SADC Animal Agriculture Research Network and suggested its institutional framework and mode of operation. The stakeholders also reviewed the revised SACCAR Livestock Research Priorities (SACCAR 1997) and a proposal on *" Collaborative Research for Livestock Development in Southern Africa"* from which they developed the networks priorities for regional research in animal agriculture. The same year, the SACCAR Board endorsed the recommendations and approved the establishment of a Regional Steering Committee (RSC) comprising of two nominated eminent scientists from SADC regions, representatives of each SADC member state, ILRI, SACCAR, the SADC Livestock Sector Co-ordinating Unit and the donor community to serve as a governing body of the regional network. A SADC Secretariat representative could have a seat on the Committee as an observer to advise on regional policy issues.

Vision

The vision of SAARNET is to enhance food security and the well-being of present and future generations in the SADC region through sustainable increase in the productivity of the animal agriculture systems.

Mission

The mission of SAARNET is to co-ordinate and promote regional integration of animal agriculture related research, training and information exchange activities to promote a sustainable increase in livestock productivity.

Objectives

- provide leadership in animal agriculture research in the region
- develop and deliver research products that enhance the welfare of the people, particularly the rural poor
- build and sustain regional capacity, partnerships and alliances for effective regional research, training and information dissemination
- assist in setting priorities and mobilising resources for implementing the regional animal

agriculture research and related activities.

The institutional framework of the network

Regional dimension of the network

As a regional network, S-AARNET will cater for the needs, interests and expectations of the relevant stakeholders in all SADC member states. These stakeholders include scientists in the NARS, NGOs, farmers and other public and private sector organisations.

This broad based participatory approach will ensure the creation of a critical mass of regional expertise that will surpass the individual capacities of member states to tackle the numerous and variable constraints to the improvement of the productivity of animal agriculture systems.

The network will provide opportunities for a collaborative approach to research with each partner contributing according to its comparative advantages. Another benefit of the collaborative approach is that it provides opportunities for multi-site and multi-location trials of which results could be extrapolated and applied broadly.

Structure of the network

The organisational structure of S-AARNET is aimed at providing opportunities for full participation and involvement of all stakeholders interested in research and development of animal agriculture from both the public and private sectors.

Stakeholders

S-AARNET is open to all individuals, institutions and organisations with an interest in animal agriculture research and development in the SADC member countries. Members are expected to actively participate in S-AARNET activities as well as assist SACCAR and the Regional Steering Committee (RSC) in promoting the interest of the network at all times.

Governance

S-AARNET programmes and activities will be articulated and managed at various levels, namely, the SACCAR Technical Advisory Committee (TCART), the Regional Network Steering Committee, the National Network Committees, the Co-ordination Office and Technical Committee.

Office and technical committees

The SACCAR Technical Advisory Committee on Agricultural Research and Training (TCART): defines regional research policy guidelines and approves regional research priorities and programmes for technology development and transfer. The TCART will, through the SACCAR Secretariat and ILRI, assist the network in mobilising the required resources for the implementation of its programs.

The Regional Steering Committee (RSC) is composed of representatives of each SADC member state, ILRI, SACCAR, the SADC Livestock Sector Co-ordination Unit and donors, two nominated eminent regional scientists and the Network Co-ordinator who will act as Secretary to the RSC. A SADC Secretariat representative will have an observer status.

The RSC ensures that the network policies are followed and implemented. As an advisory committee, the major responsibilities of the RSC are:

- identification of the regional research and development priorities to be submitted to SACCAR TCART for approval through the statutory SADC channels;
- advising SACCAR on programmes and projects to be supported by the region
- assisting in the development of research programmes in relation to SACCAR regional priorities
- peer review and selection of research proposals for funding
- monitoring, evaluation and publicising network activities
- facilitating impact assessment by individual NARS
- assisting in capacity building in the NARS
- participating in the recruitment and evaluation of the Co-ordinator
- fostering linkages within their respective countries and with the network
- facilitating linkages with other organisations implementing similar projects
- creating public awareness.

The National Network Committees (NNC): In the spirit of encouraging the full participation and involvement of all stakeholders as well as addressing their needs, interests and expectations, each participating country will be encouraged to put in place a National Network Committee. The membership of the Committee should include NARS scientists, farmers' representatives, interested private entrepreneurs, and NGOs and regional and international organisations operating in the country. The major responsibility of the committee will be to articulate constraints to livestock production at the national level, identify research priorities and link with the RSC to develop programmes to be implemented within the framework of S-AARNET.

The national committee will also facilitate the validation and transfer at the national level of S-AARNET developed technologies and information.

For each country, the country representative to the RSC will serve as the link between the National Network Committee and the RSC.

The Co-ordination Office: The Co-ordination Office will be in ILRI or SACCAR. The implementing agents and the functions of the network co-ordinator include:

- the day to day management of the network activities under the operational directives of the RSC
- monitoring and co-ordinating the implementation of the network research programme in member countries
- assisting and whenever necessary guiding national scientists in the implementation of their protocols as well as assisting them or organising assistance in the analysis and interpretation of experimental data emanating from their research
- organising and facilitating the running of identified training courses for national scientists and other partners
- organising thematic workshops and seminars and editing their proceedings
- assembling and disseminating to participating scientists and other partners database and literature searches relevant to the network research programmes
- preparing an annual programme of work as well as annual reports for consideration and approval by the RSC and SACCAR TCART
- linking participating NARS scientists with ILRI scientists whenever necessary
- maintaining close contacts with donors through ILRI and SACCAR Secretariat
- acting as Secretary to the Steering Committee meetings
- in collaboration with the Chairman, represent the network at the relevant SACCAR meetings and other forums and establish functional linkages with the ASARECA and CORAF Animal Agriculture Research Networks as well as with other relevant networks and institutions operating in the region.

Technical Committees: The RSC will identify within the region and in ILRI, key experts to

serve as members of Technical Committees (TC) in the following areas of expertise: (i) animal breeding and genetics, (ii) forage agronomy and animal nutrition, (iii) socio-economy and policy analysis, (iv) systems and natural resources management, and (v) animal health. Each Technical Committee will include a minimum of three experts and will assist the RSC to review proposals and technical reports submitted by collaborating scientists.

THE S-AARNET livestock research and development strategy

Problems to be addressed

Without improved agricultural productivity, the SADC countries will not meet future demands for food security. The major opportunities for increasing livestock productivity lie in the better integration of crop and livestock production in smallholder systems and large-scale livestock enterprises as well as improvement of range management for large-scale beef production.

The most serious constraints to improved livestock productivity in the major ecological zones of the region (humid, sub-humid and semi-arid) are: inadequate nutrition, low animal productivity, animal diseases, lack of information reaching the farmers on potential innovations, and specific agro-ecological constraints. Livestock production is also adversely affected in a number of countries by inappropriate socio-economic and policy environments such as price control, lack of credit and market information, monopolistic behaviour, excessive regulations and control of livestock movements or inadequate infrastructure that limit producers' access to inputs and appropriate technologies. These result in severe setbacks in the development of the sector, as there is no incentive for the promotion of livestock production and the marketing of livestock and livestock products at national and regional levels. Furthermore, livestock marketing is often constrained by zoonotic and epizootic diseases such as brucellosis, anthrax, Rift Valley Fever, rinderpest, foot and mouth disease etc., which result in animals or livestock products being banned for export or local/regional consumption.

In relation to pastoral systems, some countries have developed contingency plans for emergency responses to disasters but the operations of the existing Early Warning Systems (EWS) do not address the interests of livestock systems. The frequency, quality and timeliness of information provided are still insufficient to constitute proper tools for disaster management at national or regional levels. Again findings from vulnerability studies are rarely pieced together to form a regional picture that could lead to the formulation of comprehensive strategies for disaster management and contingency plans (prevention, preparedness, early warning, mitigation, public education and training, impact assessment and need assessment, relief and rehabilitation).

From the institutional perspective, existing post-graduate education is not preparing scientists adequately for research on integrated crop-livestock systems and many scientists are working in isolation, not able to keep abreast of new techniques and methodologies. Extension services are not efficient enough in promoting the adoption of modern techniques by farmers. There are also weak links between research, extension services and farmers. The infrastructure available for livestock research and development is also usually not fully utilised for lack of operating funds or relatively minor capital items.

In order to overcome the above problems, NARS must adopt strategies to mobilise human and capital resources for implementing research projects, as well as provide continuing education opportunities to restore and strengthen their research capacity for improved technology generation and transfer to producers.

Strategy formulation

This network strategic plan is consistent with the revised SACCAR regional priorities and strategies for achieving food security in the SADC region through increases in agricultural production, efficient and sustainable utilisation and conservation of the natural resources, and increased economic growth. The plan is also in line with the recommendations made by representatives of SADC member states at the workshop that launched the network and formulated its research agenda in April 1997. Formulating a livestock research strategy to anticipate and address the needs of the region is a task with multi-dimensions. These include guiding principles and considerations for species, commodity outputs, agro-ecological zones, farming systems, research and research related priorities, the focus and nature of research, equity, poverty, the environment, sustainability and potential impact. This strategic plan is built on these elements.

Guiding principles

The success and impact of the activities to be undertaken by the network will depend largely on the extent to which these activities are focused and relevant to the livestock research and development strategy of the SADC region. Therefore the choice of activities to be undertaken by this network will be guided largely by the following criteria:

- The activity must be regional in character and consistent with SADC-SACCAR strategy and priorities. The first objective is the generation of new knowledge and products, while the others include training, information dissemination and partnerships.
- The activity must be one for which the network has a comparative advantage.
- The activity must be research or research related.
- The activity must take cognisance of global and regional concerns on food security, poverty reduction, environmental protection, gender sensitivity and sustainability.
- The activity must be demand-led, and target SACCAR-SADC priorities.
- The activity must be multidisciplinary and multi-institutional in character.
- The activity must have potential for regional impact.

Species and commodity output

The strategy targets five livestock species including cattle (beef and dairy), poultry, goats, sheep and pigs and nine commodity outputs (meat, milk, eggs, fibre, hides, skins, pelts, manure and traction). In the long term, however, with recurrent droughts and increased potential for increased commercialisation of cattle and the intensification of small-holder mixed crop-livestock systems, equines (especially donkeys) are likely to assume an important role in providing draft power in the small-holder production systems.

Agro-ecological zones and production systems

For the purpose of addressing research priorities, the region is broadly divided into three agro-ecological zones, namely, the semi-arid, the sub-humid and humid zones. Emphasis will be placed on mixed crop-livestock systems in the semi-arid and sub-humid agro-ecological zones for all species and intensive commercial production of pigs and poultry across all the zones. Some arid zone and pastoral systems have potential for increasing production and offtake, but the opportunity to enhance these will be to focus on natural resource management and drought mitigation.

Research and research related priorities

The research and research-related priority domains identified include animal genetic improvement (including the characterisation, conservation and utilisation of animal genetic resources, and the evaluation and exploitation of resistance/tolerance to diseases and

parasitism); improving feed supply and nutrition (with emphasis on locally available forages, crop residues and agro-industrial by-products); integrated animal health management (including epidemiology, vaccine development, disease control and animal health delivery systems); natural resource management in crop-livestock systems (including systems analysis and impact assessment, range land ecology studies, monitoring of land-use systems and their impact on the environment); policy and socio-economic analysis on issues relating to animal agricultural development; and strengthening regional research capacity.

Nature of research

The network research activities will focus on applied and adaptive research in the development and management of the production systems, the conservation and management of resources, and selected commodity development and improvement. However, the network will undertake basic and strategic research activities needed to support its applied and adaptive research activities in collaboration with partners including International Agricultural Research Centres (IARC's), Advanced Research Institutions (ARI's) and the private sector. The complex nature of animal agriculture demands a holistic approach to research, hence the research activities will emphasise a farming systems approach with opportunities to ensure the full participation of the relevant stakeholders, including farmers.

The Beneficiaries

The majority of the key players in livestock dependent production systems are resource poor, especially women and children. The primary concern of the strategy is therefore the generation of knowledge and products that will enhance the welfare of the resource poor.

The immediate beneficiaries will be the NARIs and their scientists as well as the collaborating research and development institutions including the NGOs, the extension services and the regional/international centres.

In the medium term it will be the farmers participating in the implementation of the network strategy programmes.

In the long-term the main beneficiaries will be farmers and the national economies through economic growth at household and national levels.

Considerations driving the research and development agenda

The logical consideration in developing a broad based regional livestock research and development agenda is to look at the development needs of the sector and the factors driving those needs.

A number of major trends are known to be affecting the livestock sector and determining the needs of the sector and therefore merit consideration. These are, *inter alia:*

- almost all of the ruminant meat and milk as well as most of the pig meat production will, for the foreseeable future, continue in the smallholder systems
- however, most of the increase in production will come from the intensification of livestock production in these smallholder-mixed farming systems, in which there will be a greater interdependence of livestock and crop sub-systems
- and as intensification increases, research must increasingly recognise the need for ecosystem management
- also with intensification of agriculture, the productivity of smallholder production systems will largely depend on increased use of inputs such as traction, manure and fertilisers
- with increase in urbanisation, changes in consumer preferences could lead to

specialisation and in some cases, a shift to industrial scale production as in the case of pig and poultry production
- resource management issues are perceived as the major challenges in some pastoral systems with potential for increasing production and offtake
- new science-based technologies have potential to significantly enhance animal agriculture productivity
- strengthening human and institutional capacities will create greater capacity for research and development in the region.

Research priorities formulation process

The research agenda largely addresses the revised SACCAR priorities and strategy. The agenda also draws on several other sources of information including a number of studies, workshops and regional sector reviews that have identified opportunities for increased and sustainable livestock productivity deriving from the application of research-based technologies. These include among others:

- November 26–27 1986: SACCAR workshop on smallholder dairy, small ruminants, pig, poultry and rabbit production in the SADC countries, Maseru, Lesotho.
- July–August 1988: ILCA-commissioned feasibility study on ILCA/SACCAR livestock research collaborative activities in SADC countries.
- March 1989: SACCAR/Rockefeller Foundation/CGIAR Task Force on African Consultations.
- July 1992: ILCA workshop on the future of livestock industries in East and Southern Africa, Kadoma, Zimbabwe.
- November 1992: World Bank/SPAAR/SACCAR Task Force Report on Agricultural Research in Southern Africa: A Framework for Action.
- 1995: Consultancy report on the long-term strategy for regional research priorities on food, agriculture and natural resources in the Southern Africa Development Community (SADC) (Vol. 3. Livestock Sector).
- January 1997: Consultancy reports on the "regional research priorities for crop and livestock production.

February 17–21, 1997: FAO/SADC/UNDP workshop to discuss "a basic strategy for the development of farm animal genetic resources in SADC countries, Gaborone, Botswana.

- March 10–14, 1997: SACCAR major stakeholders meeting to discuss and review consultants' recommended strategies for crops, farm animals, natural resources management and human resource development in Southern Africa, Gaborone, Botswana.
- April 21–25, 1997: SACCAR/ILRI workshop on "The Regionalisation and Reorganisation of ILRI - NARS Collaborative Research Networks (Cranes), Gaborone, Botswana.
- The current SACCAR strategy for agricultural research and training in SADC.

Research agenda goal and objectives

Goal

The main goal of the research agenda is to enhance and sustain food security and improve the living standards of the people of Southern Africa through sustainable increases in the productivity of the animal agricultural production systems, especially in the smallholder systems.

Objective

The specific objective of the research agenda is to achieve sustainable improvement in animal agriculture productivity in the SADC region in order to decrease importation of livestock products and generate employment and income in the smallholder farming systems.

The research agenda and related activities

Genetic improvement, conservation and utilisation

The objectives of the genetic research are to: identify indigenous farm animal genetic resources with exceptional productive and adaptive characteristics to serve as a basis for sustainable farm animal production improvement; develop breeding strategies and feasible *in-situ* and *ex-situ* conservation methods for sustainable utilisation and conservation of identified genotypes; build a regional database on animal genetic resources and contribute information to the geo-referenced database developed by ILRI, the FAO and other organisations on farm animal genetic resources and the systems in which they exist. These activities will be linked and complementary to the FAO Global Programme for the Management of Animal Genetic Resources, the on-going FAO/SADC initiative on Farm Animal Genetic Resources and the ILRI Pan-African initiative on the characterisation of animal genetic resources.

Research activities

- Characterisation (phenotypic and genotypic) of the animal genetic resources and the systems in which they exist.
- Breed improvement and conservation.
- Development and utilisation of disease resistant breeds/strains.

Expected products

- Animal genetic resources and their systems characterised.
- Genetic relationships of known breeds established for better conservation and utilisation.
- Breeding and management strategies developed.
- Regional database on animal genetic resources established.

Nutrition and feed resources development

The objectives of the feed resources research activities are to identify and characterise available feed resources in the region; introduce and evaluate forage germplasm (grasses, MTPs etc.); and develop appropriate feeding packages based on crop residues, forages and agricultural and industrial by-products, especially for intensive production systems.

Research activities

- Introduction, evaluation and conservation of forage germplasm.
- Feed improvement (forages, crop residues and agro-industrial by-products).
- Feeding and management options for intensive management systems.
- Research to exploit indigenous knowledge.

Expected products

- Adapted forages established.
- Technologies for incorporating forages into smallholder systems developed.
- Suitable feed resources identified for supplementary feeding.
- Database on available and suitable feed resources.

Sustainable integrated animal health management

The aims of the animal health research are to develop cost effective and affordable integrated disease and parasite control regimes tailored for different farming systems and to maximise productivity by reducing the impact of target diseases.

Research activities

- Epidemiology and disease control.
- Development of vaccines and diagnostic tools.
- Disease resistance/tolerance studies for the development and promotion of disease-resistant/tolerant domesticated animals.
- Ethnoveterinary research to exploit indigenous knowledge.
- Drug efficacy and resistance studies to develop improved drug use regimes.
- Economics of diseases and their control measures.

Expected products

- Community-based integrated disease management and control strategies.
- Economic impact of target diseases.
- Vaccines for target diseases.

Natural resource management

The objective of this research domain is to improve the efficiency of use and conservation of the natural resources that support the crop- livestock systems.

Research activities

- Rangeland ecology and management (technical and socio-economic).
- Soil-plant-Animal Relationships.
- Monitoring of land-use systems and their impact on the environment.
- Research to exploited indigenous knowledge.

Expected products

- Better understanding of the interaction of livestock and environment.
- Methodologies for on-farm R&D.
- Strategies for rangeland management.

Systems, policy and socio-economic analysis

The objective of this research area is to promote better formulation of regional policies for informed decision-making.

Research activities

- Analysis of the socio-economic and policy constraints related to land tenure and land-use, marketing (including post-harvest technology), inter-regional trade, privatisation, and delivery of veterinary and other animal agricultural services.
- Economic, social and environmental impact assessment of farm animal production programmes and interventions.
- Identification and recommendation of policy options that are supportive of sustainable

farm animal production.

Expected products

- Knowledge and understanding of the technical, social and economic factors affecting animal agriculture.
- Policy options for informed decisions.

Crisis mitigation in livestock dependent systems

The objective of this work is to make livestock-dependent systems more resilient in times of crisis, especially drought.

Research activities

- Identification of the major environmental and socio-economic indicators of crisis incidents.
- Identification and evaluation of existing and potential coping mechanism and contingency plans.
- Assessment of the impact of crisis on bio-diversity and the farmers.

Expected products

- Major crisis indicators identified.
- Coping mechanisms and contingency plans developed.

Human resource development (capacity building)

The objective of this activity is to strengthen NARS capacity to carry out livestock research through training and the provision of technical and specialised information, especially within the framework of regional research projects. The tasks/activities identified are:

Facilitating training for MSc and PhD in the following areas of specialisation

- Forage science.
- Animal breeding/genetics.
- Biotechnology/molecular biology.
- Livestock economics.
- Natural Resources Management/Environmental Services.
- Social anthropology with emphasis on livestock
- Animal health economics.
- Animal Health.

Short courses/workshops through collaboration with ILRI and other relevant organisations in the following areas:

- Project proposal development
- On-farm research (surveys and monitoring methodologies including livestock breeds and diseases).
- Participatory Research methods including gender analysis.
- Statistical techniques and tools for livestock data management
- Dairy processing technologies.
- Recent advances in animal nutrition research techniques

- Improvement of agricultural information management and delivery systems (Communication).
- Diagnostic methodologies for target diseases.
- Reporting and presentation of research results.
- Impact assessment.

Training of trainers

Efforts will be made to identify, from among the participants in the various training courses/workshops, potential trainers for additional preparation to enable them assume responsibility for regional or national training.

Mode of operation and implementation

The regional collaborative research programme will be developed and implemented within the framework of several collaborative research programmes:

Development and approval of research and research related activities

A team of experts will be drawn from member states to identify and prioritise researchable issues for each research theme identified. This is to bring focus to regional research as well as avoid duplication of efforts

NARS scientists in SADC member states and their collaborating partners will develop operational research proposals addressing one or more topics of the regional collaborative research priorities identified by the regional team of experts following the guidelines and format defined by the S-AARNET RSC (see page 18).

The proposals will be reviewed by appropriate technical committees based on set criteria (including scientific merit, potential impact and regional relevance). The RSC will decide on the award of the competitive research grants to successful proposals. The Co-ordinator will provide the feedback to the participating scientists.

The successful proposals will be implemented by the investigating teams in their respective NARS institutions with the technical backstopping of the S-AARNET Co-ordinator, the members of the RSC and identified experts from within the region.

Management of activities

The programmes will be managed daily by the S-AARNET Co-ordinator under the guidance of the RSC with administrative support from ILRI and SACCAR. The Co-ordinator and the RSC chairperson will be responsible for reporting on programme activities to SACCAR and ILRI. Network programme funds will be kept in-trust by ILRI but the allocation of operational project funds and their disbursement will be decided by the RSC. ILRI will be responsible for the financial accounting to SACCAR and the donors.

Collaborators

The potential collaborators include scientists in ILRI and other regional and international research centres operating in the region (CIAT, CIMMYT, ICRAF, ICRISAT, IFPRI, IITA *inter alia*) as well as scientists from Advanced Research Institutions (ARI's) including Universities in Europe and the USA.

The scientific community will work in close collaboration with other stakeholders in the public and private sectors including farmers, relevant NGOs, entrepreneurs, extension services, government and international agencies *inter alia.*

Whenever appropriate, linkages will be established with other SADC networks and projects to avoid duplication and ensure complementarities.

Monitoring and evaluation

Overall, the achievements and successes of S-AARNET activities will be assessed in terms of its objectives as set out earlier.

Specifically, the impact of network activities will be measured in terms of research products and their direct or potential effect on the target groups, the extent and quality of human resources development and the level of information exchange (including the number of publications). Other measurable indicators at various levels (short, medium and long term) will be indicated in the logical framework developed for operational projects.

Members of the RSC will assist the Co-ordinator in monitoring the network's activities in their respective countries as well as at the regional level whenever requested by the Co-ordinator. The RSC will review all progress reports submitted by collaborating scientists. Such progress reports will follow a given format including statements on the objectives of study, work done, achievements, constraints and budget. Attached to this report should be the future work plan and the budget.

The progress of S-AARNET programmes will be reviewed annually by the Steering Committee. In addition, there will be mid-term and end-of-projects external evaluation as well as mid-term and end-of-projects workshops to discuss and share the results.

Guidelines and format for developing project proposals

Guidelines

Guidelines for project proposals follow:

- The study must address researchable areas indicated in the regional collaborative research agenda.
- Applicants should be employees of national agricultural research institutions, universities, relevant NGOs and private sector from SADC member's states.
- All proposals to the RSC should be channelled through the designated national representative to the network RSC.
- Proposals will be evaluated based mainly on scientific merit, potential impact and regional relevance.
- Multidisciplinary and trans-boundary institutional project proposals will have added advantage for funding.

Format

The proposal should follow the following format:

- Title.
- Theme: refers to the identified regional themes.
- Principal investigator(s).
- Collaborators/ partners: other scientists, extension officers, NGOs, farmers.
- Site(s).

- Starting date and ending date.
- Background and justification: description of the region; production system; problems to be addressed; current knowledge on the topic (brief review of the literature relating to key elements of the intended research).
- Objectives :
- Overall
- Specific objectives
- Expected output: the proposal is expected to generate products including technologies and new information. Milestones for the expected products must be indicated.
- Beneficiaries.
- Material and methods: should be clearly indicated including experimental design, taking into consideration each of the objectives of the study. Methods should be clear on what data/information will be collected, and how and when the data will be collected.
- Workplan: clearly indicate the different phases of the study. It should be an annual work plan indicating details of the activities to be carried out.
- Logical framework.
- Budget: the structure of the budget should indicate, per year, the budget requested from the network as well as the host institution's contribution by component. A summary of that budget will indicate the following components:
- Personnel
- Equipment
- Operational cost
- Human resources development: training and information
- Overheads (not more than 10% of total operational funds requested).
- Budget notes: These should justify the funds requested by indicating how estimates were derived

Conclusion

A strategic plan is a statement of intent with a time frame. This network strategic plan is for the next 5 years. But this is also a document to guide the stakeholders in running the network. It is there not cast in stone. It will be reviewed as and when the majority of the stakeholders feel that circumstances warrant a review.

For more information, please contact the co-ordinator at this address:

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References

SACCAR (The Southern African Centre for Co-operation in Agricultural Research and Training) 1997. Regional Research Priorities for Crop and Livestock Production. African Centre for Cooperation in Agricultural and Natural Resources Research and Training, Gaborone, Botswana. January, 1997. pp 119.